JULY/AUGUST '85

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VOL. 1 NO. 5

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FOR THE T/S 2068 AND ALL OTHER
TIMEX AND SINCLAIR COMPUTERS

Time Designs™ MAGAZINE

JULY/AUGUST '85

VOL. 1 NO. 5

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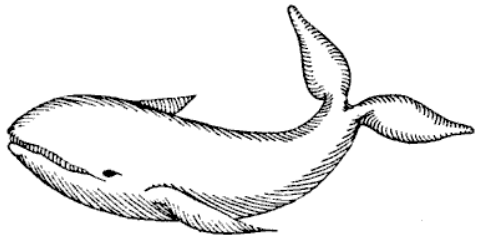
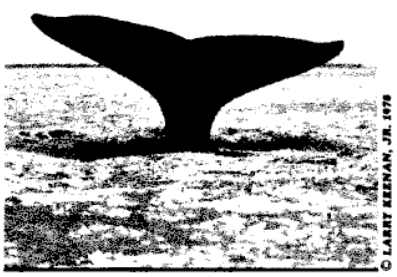


Imagine a world without WHALES



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San Francisco, CA 94123

Editor's Corner

Summer is the time for activities that seem to take presidence over personal computing. The house that badly needs paint, an unruly lawn, and that week-long vacation you promised the kids. Does this sound familiar?

The weather has taken a complete turn-around from what it was a few months ago. It can get quite hot out there. This could pose a peculiar problem for your Timex/Sinclair, that you might not have thought about. System crash...due to over heating. When the room temperature hits 90°F, it might be time to turn up the old air conditioner.

Just in case the lure of summer has overcome you, we have put together an issue that might peek your interests in that lonely computer once again. First up is a report on the new Aerco FD-68 Floppy Disc Interface for the T/S 2068. It has been long awaited, and appears to be a class piece of hardware. There is also other bits of information on disc drive systems in general. As the cover of this issue proclaims: "Sinclair Micros Shift To High Gear!" Let's face it, you just can't beat the flexibility and speed of a floppy. Most computer purists (other brands) haven't considered our "lowly" Timex and Sinclairs too seriously for the fact of poor drive support. Now we'll show them! Our beloved 2068 has finally grown up. Note: Aerco also has a disc drive interface available for the T/S 1000/ZX81.

The 8K ROM Upgrade by Tom Bent, is an easily installed device that many T/S 1000/ZX81 owners will be interested in. It really gets things working faster for you. See the complete report inside. What else is offered? Nice graphics for the 2068, an article on "setting RAMTOP without destroying the program" for the 1000, lots of software reviewed, and all of our regulars including the popular "Shopping Mart". Now what are you going to do...don that bathing suit and head for the pool, or kick back and get down to some serious hacking???

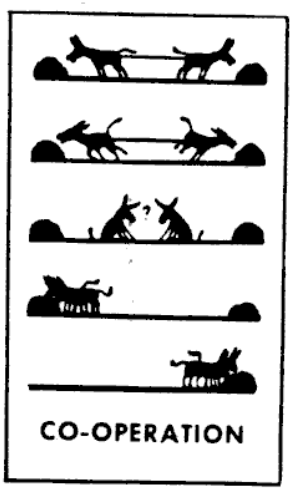
Our humble little office here at TIME DESIGNS has recently under gone some change. It is now three times larger than before, with room to grow. Our address is still the same, and so is our telephone number. It is possible that your copy of the magazine has a little sheet rock dust on it or specks of paint. I doubt it, but if you do, I hope you'll understand.

Hey, did you know that TIME DESIGNS is <u>your</u> magazine? Feel free to drop us a note anytime, if you have something on your mind. A question, comment, or some routine you would like to share with others? You've come to the right place. We like correspondence of all kinds. Heck, you might even see your name in print sometime. We may not have all the answers, but we know users that do.

Your a great bunch of people! Keep up the good work.

Tim Woods
Editor

A LITTLE HUMOR



BITS AND PIECES

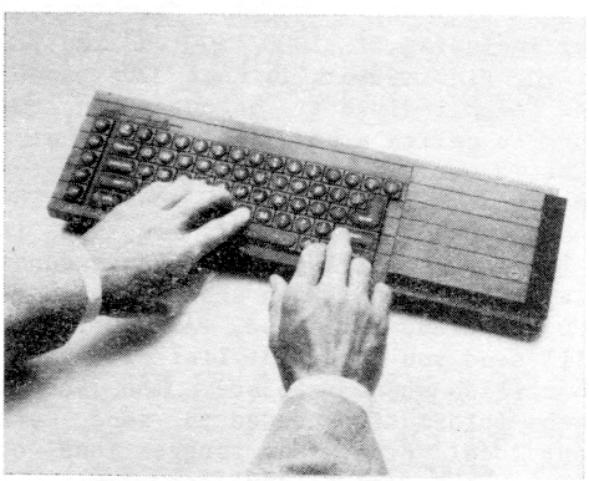
SINCLAIR NEWS

Sinclair Research Ltd. suffering from severe cash-flow problems has been bailed out by Robert Maxwell, owner of the Daily Mirror Newspaper in London. Mr. Maxwell will input about $15 million into Sinclair in return for about 75% of the company. Sir Clive will step down as chairman, and Maxwell will take his place. Sir Clive will only be a research consultant to the company, which he founded. His holding interests will drop from 85% to only 15%. This story was reported in the New York Times and The Wall Street Journal on Tues. June 18. It was also confirmed by a representative at Sinclair Research U.S. Div. The general consensus is that business will continue as usual at least for the time present.

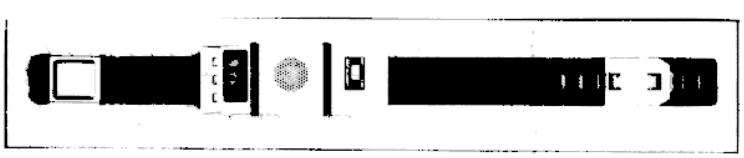
Sir Clive has been faced with a bad market situation that parallels the U.S. computer market back in 1984. Several U.K. computer firms have gone out of business. The Sinclair Spectrum + has been slashed in price now for a couple of months, to compete with the Commodore C64 and Atari. Along with personal computers, Sinclair also markets a portable Flat-Screen TV (that is smaller than a paperback book), a digital wristwatch with a built in FM radio, and a small electric vehicle.

The QL finally became available to U.S. customers in May, nearly one year later than it's original expected release date. It is being sold by mail order from Sinclair's branch office/shipping center at One Sinclair Plaza, Nashua, NH 03061 for $499.00 plus $12.00 s & h. American Express Corp. was involved in a market survey with Sinclair, and sold QLs to their customers for a short time. The QL, a 32-bit 128k small business computer, complete with twin microdrives and four software packages, will be the topic of much discussion in the months to come.

Uncle Clive steps down.



The QL is really for sale here in the U.S.
No kidding...and nearly one year late!



The Digital FM Watch is here too.
Did Dick Tracy like tea and crumpets?

TELECOMMUNICATIONS

A new TIMEX NETWORK is available, thanks to the groudwork layed down by Ed Grey of Inglewood, CA (who is also SYSOP of the TIME |X| CHANGE), and also Dave Clifford (of Z-LINK fame) from Gardena, CA. The TIMEX NETWORK uses the nationwide and international FIDO-NET. The cost is very low...25 cents per message sent to most nodes in the U.S. and Canada. England and other foreign countries cost more. Messages are exchanged between nodes each late night, therefore a message could be sent and an answer received back (from across the country or across an ocean), in a little over 24 hours. Fido-Net is a group of independently owned and operated computers, running Fido software (MS-DOS), which is designed to handle (BBS) and transmit (network) messages. The system will work with any computer/modem combination, including T/S 1000/1500 and the T/S 2068. The Fido network is now 268 nodes strong (each individual computer in the network is called a node) and growing at a rate of 15 per week. If you are interested in joining the Timex Network, you must locate and contact (by modem) a Fido node in your local area and log-on. If you cannot find a Fido-Net BBS, then send a S.A.S.E. to: PO Box 2186, Inglewood, CA 90305, and Ed will send you a current list of international Fido phone numbers. You should find the information needed to send mail on your local Fido. Any suggestions or questions, ect. can be sent to-

Name: Ed Grey
Node Name: Switch Pak #1,
Hawthorne, CA
Node Number: 411 in Net #1

Bill Ferrebee of T-S Horizons contacted us and reported that the T/S SIG on the River Cities BBS is no longer in operation, but that a new Timex BBS is in the works. It will feature a sytem using the T/S 2068 and some special software that is presently being programmed for it. For further information, contact Bill at: 115 N 7th Ave, Paden City, WV 26159.

There is a cassette tape available featuring ten top hit game programs from England, for the Spectrum computer. All proceeds from the sale of the software go to the BAND-AID TRUST FUND to aid starving Ethiopians. The Band-Aid project was first implemented when British Pop Music Stars recorded and donated a Christmas song for the effort. The "greatest hits" tape is called SOFTAID, and contains the following games: Spellbound (Beyond), Starbike (The Edge), Kokotoni Wilf (Elite), The Pyramid (Fantasy), Horace Goes Ski-ing (Melbourne House/Psion), Gilligan's Gold (Ocean), Ant Attack (Quicksilva), 3D Tank Duel (Real-Time), Sorcery (Virgin), and Jack and the Beanstalk (Thor). On the "flip" side of the tape is the recorded version of the song "Do They Know It's Christmas?"

Rod Cousens of Quicksilva organised the software relief project, and hopes that it will raise some £200,000 for the Ethiopians. Here in the U.S. the SOFTAID Spectrum tape is available from Susan Ziegler, Software Services, 14307 BenBrush, San Antonio, TX 78248, for a mere $6.25 plus $2.00 for first class p & h. Bob Dyl of the English Micro Connection, 15 kilburn Ct., Newport, RI 02840 will also have substantial supplies of SOFTAID shortly. The British software producers have been very generous in their efforts. The tape is very reasonably priced, and everyone should obtain their own copy...pirated versions won't help dying people one bit. Note: There is also a version for the Commodore 64.

TIMEX PORTUGAL

Several lucky T/S users in the U.S. have acquired imported models of the Timex Disk Drive Sytem for the Timex 2068, from Portugal. This 3" Hitachi floppy sytem, is smartly styled in a silver case to match the 2068 perfectly. The drives are not presently available here in the U.S. Very favorable reviews have appeared in the British magazine SINCLAIR USER (April 85), in the May/June newsletter of the L.I.S.T. Group from New York, and in the very nice May 85 issue of SUM from Gainesville, FL (complete with very detailed photos).

Future availability here for 2068 owners, was still under negotiation as we went to press (and the concerned parties requested that we hold the information until something substantial materialized). It appears that when supplys of this great system are made available, it will be "wait in line time". Look for more details in the next issue.

MISC.

The MSCRIPT Word Processor for the 2068 is available for only $24.95 from Zebra Systems, Inc. 78-06 Jamaica Ave., Woodhaven, NY 11421. Include $3.00 for total order postage and handling. Also, request their free catalog.

RMG Enterprises, 1419 1/2 7th St., Oregon City, OR 97045 has picked up the CRICKET HOUSE line of products for the T/S 1000/ZX81. There is a complete keyboard kit (T/I type) with shifted function keys diode pak, stick-on keytops, and detailed instructions, for $24.95 plus $2.00 for postage and handling. A T/S word processor is also offered for $9.95 (+ $.50 p & h). Send S.A.S.E. for further details.

Interested in a RS-232 port for your T/S 1000/ZX81? Edward Loxterkamp, 249 West Dayton-Yellow Springs Rd. #248, Fairborn, OH 45324 is willing to answer questions, give details or more information regarding his article that was published in Spring '85 issue of HANDS-ON ELECTRONICS.

Software for T/S Computers, including a digitized speech synthesizer program ($16.95 for 2068 version), are available from Tad Painter, Box 1666055, Irving, TX 75016. Send S.A.S.E. for more information.

Frank Lockhart, PO Box 4095, Ormond Beach, FL 32075-4095 is an engineer and computer programmer, who offers a comprehensive list of software for all T/S Computers, that he has written. Everything from games and utilities to mathmatical and engineering programs. Send S.A.S.E. for descriptions and price list.

Jim Clatfelter, who sells his own software programs for the 2068, has a new address: 3361 Sand Ridge Rd., Placerville, CA 95667.

The new version of the classic ZX81 word processor called WORD SINC II.5, is now available from Peter McMullin, 2340 Queen St. E, Toronto, Ont., Canada M4E 1G9. Peter re-wrote this version in cooperation with Powell Hargrave the author of the original. It is "ready to load and start printing" with any Epson code compatible printer. It is however, extremely versatile and can be modified easily to accomodate any commonly used printer. Send $30.00 (Canadian) + $1.00 p & h. A comprehensive manual is planned and will be made available soon. Other related software is also available. Write for details.

Contrary to popular belief, the repair and service center at Timex Corp., Little Rock, Arkansas, is still very much in business for your computer problems. They will continue to repair 2068, 1000, and 1500s for a nominal fee. Of course, if your computer is still under warranty, the fee will be waivered.

USERS GROUP UPDATE

If your group hasn't been listed in TIME DESIGNS before, such as the directory in issue #3, or another issue's update... please send us the information so that we can mention you. Here are some new ones to add to your list:

Atlanta Timex Users Group
8286 Canyon Forge Dr.
Riverdale, GA 30274
Contact: David Butkovich

Southern VA Timex Users Network (STUN)
Rt. 1 Box 21
Glade Hill, VA 24092
Contact: Gary S. Preston II

(Several publications including ours, have been inadvertently calling the STUN group SLUG!?!)

MORE OR LESS

by Paul Bingham

Listings #1 and #2 are shown to illustrate but one point. Both are graphically interesting, though this was not my full intention by including them.

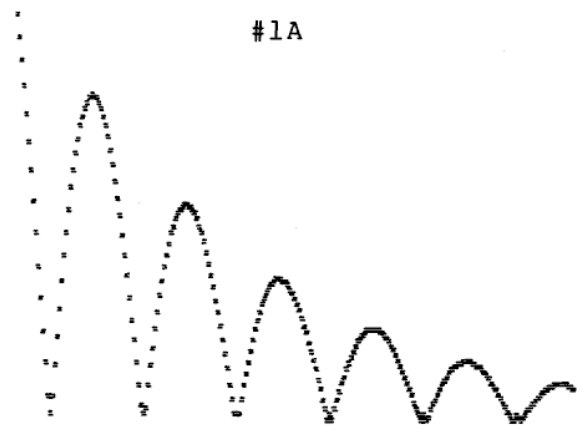
Often what is most important when one does mathematically generated graphics is SPEED. Many take the 2068 the better part of an hour to produce...a long time to wait if one is testing and debugging formulas. One common trick is to change STEP values in FOR/NEXT loops to larger numbers. This lets a programmer "skip the detail" and more quickly get an idea of the general outcome. For the final version such values can be altered back so as to show the detail again.

I have found, however, that we tend to overwork our computers when generating graphic displays. The T/S 2068 knows no fatigue. It will calculate cos .4 five thousand times during a graphic without a complaint. But couldn't the value of cos .4 (.92106099) just as easily have been plugged in and thus saved some TIME plotting the graphic?

The more calculations the 2068 is forced to do each go, the slower and less appealing our graphic is to watch. Listing #1A produces a "bouncing ball". Listing #1B does exactly the same thing only less Work. Note the math in lines 180 and 190 of listing #1A have been reduced to line 20 of listing #1B. All the variable calculations in lines 10, 20, and 30 of #1A were also eliminated. These should both be run and compared for speed. Listing #1B will go even faster if line 30 is changed to read simply: PLOT x,y.

Listings #2A and #2B are mathematically much more complex. Again both produce the same sort of graphic. Listing #2A abounds in variables set and is replete with other formula "fat". Most certainly the formulas in this listing should be worked through and understood by the the programmer. In the final version such length is of no use to the computer, simply more code it must wade through. Listing #2B is a version with nearly every slow calculation trimmed down.

#1A



```
 1 REM        BOUNCING BALL
 10 LET xm=254: LET ym=174: LET
h=174
 20 LET w=PI/40: LET d=90*PI/18
0
 30 LET k=.01
 170 FOR n=0 TO xm-10
 180 LET yn=h*SIN (w*n+d)*EXP (-
k*n)
 190 LET yn=ABS (yn)-3
 200 PLOT n+10,yn: PLOT n+10,yn+
1: PLOT n+11,yn: PLOT n+11,yn+1
 210 NEXT n
```

#1B

```
  1 REM        BOUNCING BALL
  10 FOR x=0 TO 253
  20 LET y=174*SIN (.0785*x+1.57
)*EXP (-.01*x)
  30 PLOT x,y: PLOT x+2,y: PLOT
x+1,y-1: PLOT x+1,y+1
  40 NEXT x
```

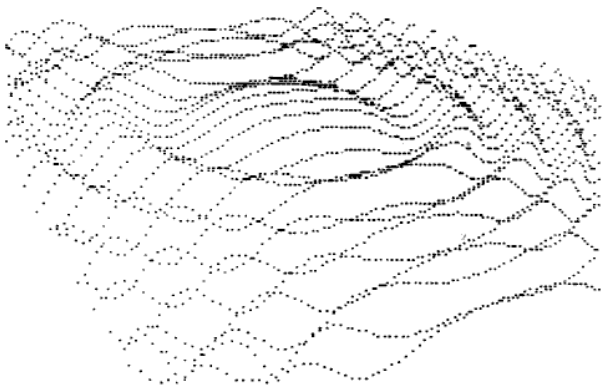
Listing #2B is a fun one for experimentation. The slightest variation will cause differing outcomes. The beauty and excitement can only be achieved through experimenting, but some examples include:

1) Changing the value multiplied by z in line 120 adjusts the height of the topography--.3 is flatter, .8 is steeper, 2.0 is pretty strange.
2) The value 600 shown in lines 100 and 120 can be increased for larger scale, decreased for smaller.
3) The value for b in line 90 is negative. The more negative it becomes the more exaggerated the right portion of the display becomes.
4) As discussed earlier, a smaller STEP value in line 60, the closer and more detailed the plotting becomes (and slower, too).

#2A

```
  20 LET t=.4: LET j=1.25: LET e
=600
  50 FOR a=19 TO -44 STEP -1
  60 FOR b=-35 TO 16
  70 LET z=COS (.06*(a*a+b*b)):
LET w=-a*SIN t+b*COS t: LET d=-a
*COS t*COS j-b*SIN t*COS j+z*SIN
 j
 100 LET h=80-a*SIN j*COS t-b*SI
N j*SIN t-z*SIN j
 110 LET x=124-e*(w/h)
 120 LET y=96+e*(d/h)
 130 IF y>176 OR y<0 OR x>255 OR
 x<0 THEN GO TO 200
 140 PLOT x,y
 200 NEXT b
 210 NEXT a
```

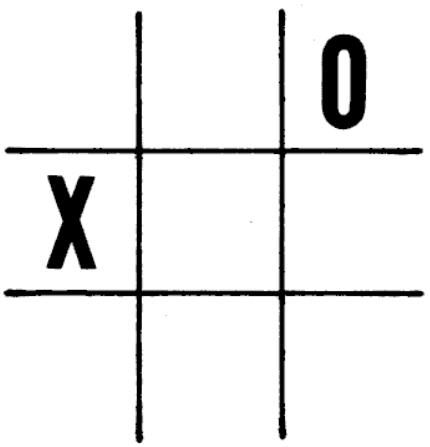
#2B



```
  1 REM        2068 CRATER
 10 BORDER 1: PAPER 1: INK 7
 20 LET q=-4: CLS
 30 FOR a=23 TO -16 STEP -1.6
 40 IF a>5 THEN LET q=q-1.7
 50 IF a<5 THEN LET q=q+1
 60 FOR b=q TO 15 STEP .3
 70 LET z=COS (.06*(a*a+b*b))
 90 LET h=80-a*.9-b-z
100 LET x=124-600*((-a*.4+b*.9)
/h)
110 IF x>255 OR x<0 THEN NEXT b
120 PLOT x,96+600*((-a*.3-b*.1+
z*.7)/h)
130 NEXT b
140 NEXT a
```

One might now take a look back through some old terribly slow graphic programs laying around. One will be amazed at the excess work we have been forcing out of our 2068s. Next time we will look into some even more interesting graphic ideas.

O



2068
TIC TAC TOE

by Paul T. Erickson

To play TIC TAC TOE:

Enter the number of the square when you see the cursor at the bottom. Each square has a number from 1 to 9. The first row is numbered 1, 2 and 3. The second row is numbered 4, 5 and 6. The last row is numbered 7, 8 and 9.

```
  10 REM Tic tac toe
  13 GO SUB 1090
  15 LET w=0: LET z=0: LET o=0:
LET y=0: LET t=0: DIM d(3): LET
k=1000
  20 LET a$="X         "
  35 LET o=0: LET b$="X": PRINT
AT 6,12;a$(1);AT 6,16;a$(2);AT 6
,20;a$(3)
```

```
  40 PRINT AT 9,12;a$(4);AT 9,16
;a$(5);AT 9,20;a$(6)
  50 PRINT AT 12,12;a$(7);AT 12,
16;a$(8);AT 12,20;a$(9)
  51 FOR x=1 TO 9: IF a$(x)<>" "
 AND w=0 THEN NEXT x: PRINT "Dra
w": STOP
  55 IF w=1 THEN PRINT "I win":
STOP
  57 IF z=1 THEN LET z=0: GO TO
82
  60 INPUT a
  70 IF a<1 OR a>9 THEN GO TO 60
  80 IF a$(a)<>" " THEN GO TO 60
  81 LET a$(a)="O": IF z=0 THEN
LET z=1: GO TO 35
  85 IF t=1 AND a$(3)=" " THEN L
ET a$(3)="X": LET w=1: GO TO 30
  86 IF a$(2)="O" AND a$(5)="O"
AND a$(8)="O" THEN PRINT "You Wi
n": STOP
  87 FOR g=1 TO 20: IF g=10 THEN
 LET b$="O": LET k=1000
  88 LET k=k+10: GO SUB k-10
  90 FOR x=1 TO 3: IF a$(d(x))=b
$ THEN LET o=o+1: NEXT x
  95 IF x>3 THEN GO TO 105
 100 LET s=d(x): NEXT x
 110 IF o=2 AND b$="X" AND a$(s)
=" " THEN LET w=1: LET a$(s)="X"
: GO TO 30
 115 IF b$="O" AND o=2 AND a$(s)
=" " THEN LET a$(s)="X": GO TO 3
0
 120 LET o=0: NEXT g
 130 IF a$(7)=" " THEN LET a$(7)
="X": GO TO 30
 132 IF a$(9)=" " THEN LET a$(9)
="X": GO TO 30
 135 IF a$(3)=" " THEN LET a$(3)
="X": GO TO 30
 140 LET h=INT (RND*9)+1: IF a$(
h)<>" " THEN LET a$(x)="X": GO T
O 30
 150 GO TO 140
1000 LET d(1)=1: LET d(2)=2: LET
 d(3)=3: RETURN
1010 LET d(1)=4: LET d(2)=5: LET
 d(3)=6: RETURN
1020 LET d(1)=7: LET d(2)=8: LET
 d(3)=9: RETURN
1030 LET d(1)=1: LET d(2)=4: LET
 d(3)=7: RETURN
1040 LET d(1)=2: LET d(2)=5: LET
 d(3)=8: RETURN
1050 LET d(1)=3: LET d(2)=5: LET
 d(3)=9: RETURN
1060 LET d(1)=3: LET d(2)=5: LET
 d(3)=7: RETURN
1070 LET d(1)=1: LET d(2)=5: LET
 d(3)=9: RETURN
1075 LET d(1)=1: LET d(2)=5: LET
 d(3)=9: RETURN
1076 LET d(1)=3: LET d(2)=5: LET
 d(3)=7: RETURN
1080 LET k=1000: NEXT g: GO TO 1
25
1090 PRINT AT 2,11;"Tic tac toe"
1100 PLOT 87,111: DRAW 88,0
1110 PLOT 87,87: DRAW 88,0
1120 PLOT 116,64: DRAW 0,71
1125 PLOT 148,64: DRAW 0,71
1126 PRINT AT 16,8;"PAUL T. ERIC
KSON"
1130 RETURN
```

T/S 1000/2068 ALPHABETIZER

by Earl Dunnington

This "ALPHABETIZER" routine will work with all Timex computers. Information on converting the program for the 2068 is contained in the REM statements and uneven lines. To SAVE this program, use "GOTO 265".

```
   1 REM ZX81,TS1000,1500,2068 "
ALPHABETIZER"-BY EARL DUNNINGTON
   2 REM BASIC COMMANDS PECULIAR
TO THE ZX81,TS1000 AND 1500 PRO-
GRAM, HAVE UNEVEN LINE NUMBERS
FOR EASE IN CONVERTING TO 2068
  10 PRINT " INPUT <NUMBER OF EN
TRIES>","  THEN PRESS ENTER"
  15 FAST
  20 INPUT A
  30 CLS
  40 PRINT " INPUT <MAXIMUM NUMB
ER OF LET-  TERS IN AN ENTRY>","
 THEN PRESS ENTER"
  50 INPUT B
  60 CLS
  70 DIM A$(A,B)
  80 FOR I=1 TO A
  90 PRINT "<TYPE AN ENTRY>",,"
THEN PRESS ENTER"
 100 INPUT A$(I)
 110 CLS
 120 NEXT I
 130 LET X=0
 140 LET X=X+1
 150 IF X>A THEN STOP
 160 IF A$(X)="ZZ      " THEN GOT
O 140
 170 FOR Y=1 TO A
 180 IF A$(Y)<A$(X) THEN LET X=Y
 190 NEXT Y
 200 LPRINT A$(X)
 205 REM FOR THE 2068 CHANGE
THIS LINE TO READ:
 205 POKE 23692,100
 215 PRINT AT 21-INT (B/32),0;A$
(X)
 220 PAUSE 60
 225 FOR N=1 TO INT (B/32)+1
 235 SCROLL
 245 NEXT N
 250 LET A$(X)="ZZ      "
 260 GOTO 130
 265 SAVE "ALPHABETIZ"
 275 GOTO 10
 285 REM TO SAVE PROGRAM USE
< GOTO 265 >
 295 REM FOR THE 2068:
DELETE LINE 15
CHANGE LINE 215 TO READ:
 215 PRINT AT 21,0;A$(X)
DELETE LINE 225
CHANGE LINE 235 TO READ:
 235 LET S=USR 2361
DELETE LINE 245
CHANGE LINE 265 TO READ:
 265 SAVE "ALPHABETIZ" LINE 10
DELETE LINE 275
```

AUTOMATICALLY SET RAMTOP

WITHOUT DESTROYING THE PROGRAM

by Earl Dunnington

How would you like to be able to set RAMTOP within your program? I was using a program "HEXEDIT" published by a former popular T/S magazine, when the program and the computer locked up. The author erroneously thought that merely poking the system variable "RAMTOP", in his program, would reset RAMTOP to a new location. This led to my research to find a method for setting RAMTOP within a T/S 1000 or 1500 program. The results of my research are presented in this article.

To see what happened with Doctor Hexedit's program, type the listing of figure No. 1 into your computer. Run the program. Wait about 30 seconds and watch the "inverse ? monster" eat up the program. You will have to pull the plug to unlock the computer. A modification of lines 50 to 80 are used in figure No. 3 as a test to see that RAMTOP has actually been moved. In order to understand why the program was destroyed, you must know the structure of the memory map of the RAM in more detail than the diagram in your users manual. The T/S 1500 manual diagram shows USR routine space above RAMTOP. This is not the case unless the additional 16k Timex Rampack is attached or you have lowered RAMTOP.

Turn on your computer. Using immediate commands only PEEK into the system variable RAMTOP to determine its address. Then PEEK into each of the four Bytes under RAMTOP. Reading from the highest address down, you should find the decimal values: 62, 0, 6, and 118. The 62 is a flag to tell the computer "This Is The Top Of The GOSUB Stack". The zero and the six are flags to tell the computer to generate a code seven error. The 118 is the code for ENTER (N/L). When we poked 24 into each of these four bytes with the crash demonstration program, the computer went crazy trying to figure out what to do.

```
--------------------------------
  COMPUTER CRASH DEMONSTRATION
--------------------------------
       8K ROM,ANY RAM
--------------------------------
  10 REM COMPUTER "CRASH" DEMO
BY DUNNINGTON
  20 SLOW
  25 REM FIND PRESENT VALUE OF
RAMTOP
  30 LET RAMTOP=PEEK 16388+256*P
EEK 16389
  35 REM DR. "HEXEDIT" THINKS HE
SET RAMTOP AUTOMATICALLY TO
18178 IN HIS LINE 9710 BY THE
FOLLOWING POKE:
  40 POKE 16389,71
  45 REM TEST TO SEE IF RAMTOP
IS STILL AT THE ORIGINAL VALUE
BY POKING 24 INTO EACH OF THE 4
BYTES BELOW ITS ORIGINAL VALUE
  50 FOR N=RAMTOP-4 TO RAMTOP-1
  60 POKE N,24
  65 REM PRINT ALLOWS YOU TO SEE
 WHAT IS HAPPENING
  70 PRINT
  80 NEXT N
```

FIGURE NO. 1

Since RAMTOP had not really been lowered, when a large amout of data was entered, the HEXEDIT program over-ran the four bytes instead of giving an out of memory code 4 error report.

Peek into the system variable "ERR--SP". You will find the address of the fourth byte below RAMTOP. The machine Stack Pointer, also known as SP, is a two byte internal set of registers that cannot be peeked into from BASIC. If we could then you would also find stored there the address of fourth byte below RAMTOP.

```
   1 REM 12345678901234567890123
456789
   2 REM CHANGE RAMTOP PROGRAM,
PART 1          BY EARL DUNNINGTON
   3 REM FOR 16K RAM CHANGE LINE
 20, THE 8TH VALUE TO 186 AND
9TH VALUE TO 119
   4 REM FOR 2K RAM CHANGE LINE
20,THE 9TH VALUE TO 071
  10 FAST
```

```
  20 LET A$="205,035,015,205,042
,010,033,000,192,034,004,064,043
,054,062,043,054,000,043,054,006
,043,054,118,034,002,064,249,201
"
  30 LET A=1
  40 FOR N=16514 TO 16542
  50 LET B=A+2
  60 POKE N,VAL A$(A TO B)
  70 LET A=A+4
  80 NEXT N
  90 REM TO CHANGE TO A VALUE OF
RAMTOP OTHER THAN 49152, REPLACE
THE EIGHTH VALUE IN LINE NO. 20
WITH THE LOW BYTE AND THE NINTH
VALUE WITH THE HIGH BYTE
```

FIGURE NO. 2

The OP codes of the USR subroutine that is poked into the line 1 REM statement by the listing in Figure No. 2 are as follows:

```
16514 CD230F     CALL 3875       :SET FAST MODE
16517 CD9A14     CALL 2602       :CLEAR SCREEN
16520 218A77     LD HL, 49152    :LET HL=DESIRED RAMTOP
16523 220440     LD (16388),HL   :SET SYSTEM VARIABLE RAMTOP TO
                                  49152
16526 2B         DEC HL          :LET HL=HL-1 OR 49151
16527 36E3       LD (HL), 62     :POKE THE ADDRESS IN HL WITH 62
16529 2B         DEC HL          :LET HL=HL-1 OR 49150
16530 3600       LD (HL), 00     :POKE THE ADDRESS IN HL WITH 0
16532 2B         DEC HL          :LET HL=HL-1 OR 49149
16533 3606       LD (HL), 06     :POKE THE ADDRESS IN HL WITH 6
16535 2B         DEC HL          :LET HL=HL-1 OR 49148
16536 3676       LD (HL), 118    :POKE THE ADDRESS IN HL WITH 118
16538 220240     LD (16386),HL   :SET ERR--SP TO 49148
16541 F9         LD SP,HL        :SET STACK POINTER TO 49148
16542 C9         RET             :RETURN TO BASIC PROGRAM
```

```
   1 REM LN 7?LN E"5 ""6 RNDFQYF
Q F0 F0
8706 TAN
   2 REM CHANGE RAMTOP PROGRAM
PART 2          BY EARL DUNNINGTON
   3 REM FOR 2K RAM DO NOT TYPE
IN LINES 2,3,4,60,70,AND 100 TO
150.
TO CHANGE TO A VALUE OF RAMTOP
OTHER THAN 49152, IF NOT ALREADY
DONE IN PART 1, POKE 16521 WITH
THE LOW BYTE AND POKE 16522 WITH
THE HIGH BYTE, BEFORE SAVING THE
PROGRAM.
   4 REM SAVE THE PROGRAM ON
TAPE USING THE COMMAND GOTO 9910
RELOAD THE PROGRAM FROM TAPE
USING THE COMMAND LOAD "RAMTOP"
   5 RETURN
  10 SLOW
  20 FOR N=1 TO 10
  30 PRINT AT 17,7;"STOP THE TAP
E"
  40 PRINT AT 17,7;"STOP THE TAP
E"
  50 NEXT N
  60 LET A=24
  70 LET A$="RAMTOP IS NOW SET F
OR"
  80 RAND USR 16514
  90 GOSUB 5
 100 PRINT A$;" ";PEEK 16388+256
*PEEK 16389,"THE VARIABLE A AND
THE STRING A$WERE NOT DESTROYED
NEITHER WAS  THE PROGRAM."
 110 PRINT AT 7,0;"RAMTOP TEST",
 120 FOR N=32764 TO 32767
 130 POKE N,A
 140 PRINT PEEK N;" ";
 150 NEXT N
9900 STOP
9910 SAVE "RAMTOP"
9920 GOTO 10
```

FIGURE NO. 3

Referring to Figure No. 3:

Line 1 is the REM line of figure No. 2 after the OP codes have been poked into it.
Line 5 can be any RETURN in your program
Lines 10 to 50 place the flashing STOP THE TAPE prompt on the screen.
Lines 60 and 70 store a variable and a string before the change in RAMTOP.
Line 80 calls the M/L subroutine to set up everything for the change in RAMTOP.
Line 90 in conjunction with line 5 activate the change of RAMTOP.
Line 100 prints the value of the new RAMTOP and the other remarks.
Lines 110 to 150 make the test to see that RAMTOP was moved.
Line 9900 keeps the program from going into an endless SAVE loop.
Line 9910 makes the program self running if the program is SAVED using GOTO 9910.
Line 9920 tells the computer where to start running the program.

The change in RAMTOP must not be activated in a subroutine or in a FOR/NEXT loop. You can only set RAMTOP as high as the first nonexistant byte above your particular RAM. You must change RAMTOP by a minimum of four bytes.

The formula for the high byte is:
HB=INT(n/256)

The formula for the low byte is:
LB=n-256*HB

Q

NEW PRODUCTS FOR THE T/S1000

reviewed by Dick Wagner

8k ROM UPGRADE

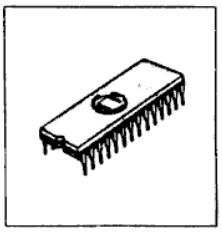
A recently released ROM upgrade in the form of an EPROM and special adapter, provides needed improvements in manufacturers original equipment.

Major changes include: normal FAST mode, 6 character shape improvement, change British Pound symbol to apostrophy, LPRINT of decimal numbers with leading zeros, fast SCROLL, proper application of divide of numbers in repetitive math, proper CLS action, fixed display file, the ability to DIMension large single string arrays (with 64k), and the ability to invoke LPRINT commands by using RAND.

Directions for installation leave out several important warnings. The IC installation must be the same direction as the original. This is determined by a half-round notch on top of the IC. This is toward the back of the circuit board. Check your computer manual for proper location of the ROM IC. However, on my computer the board is different and the ROM is to the right of the CPU. My ROM was marked MK368 09N. Instructions are given should the ROM be soldered in.

The new ROM has more pins, so it must contact all the pin sockets. When installing the keyboard ribbon cable, be very careful not to buckle or crack the ribbon. In my situation the IC is against the case when the board is in place. Also, the ribbon cable is deflected sideways slightly by the IC. These points need watching if your ROM is located behind the keyboard cable sockets.

The new ROM manual includes the MC of changes made, plus a description of what these changed routines do. Two short programs are included to show the improvement in some of the changes. One part of the major program includes filling the screen with "X" 10 times and scrolling and printing a column of "Y" each time. In SLOW mode



the original ROM processed this in 72 seconds on my 1000, while the new ROM required 45 seconds.

A peculiarity noted was that 7 seconds was required to display a 25 line program (in manual) following loading from tape, and ENTER. This seemed to be long by any standard. The program has a line to change from the now "standard" FAST, to SLOW. Deleting this line, saving and loading again, on ENTER the display was there in a flash. Further study has not been made on this.

Readers can order this improved ROM from Thomas J. Bent, 9016 Flicker Place, Columbia, MD 21045, or from Thomas B. Woods PO Box 64, Jefferson, NH 03583, and the price is $20. Documentation is included.

BANK SWITCHING AND OPERATING SYSTEM - BSOS

Paul Hunter has assembled many memory-use solutions in BSOS. Bank switching has been developed into a system much in the sense of DOS. So, what is Bank Switching? Reference to my computer encyclopedia indicates it is a method of extending RAM memory in computers. While each bank of memory responds to the same address, the system is arranged to have only one active bank at any instant. A bank is a block of memory, like 64k. I suspect Paul has coined BSOS.

Our ZX81s and T/S 1000s were not designed to handle over 16k of memory. Stretching to greater limits has required clever concepts by designers...and BSOS has incorporated additional RAM-like action, and the program to use the additional memory. As very long programs can strain 16k memories, likewise, large chunks of data can be a problem.

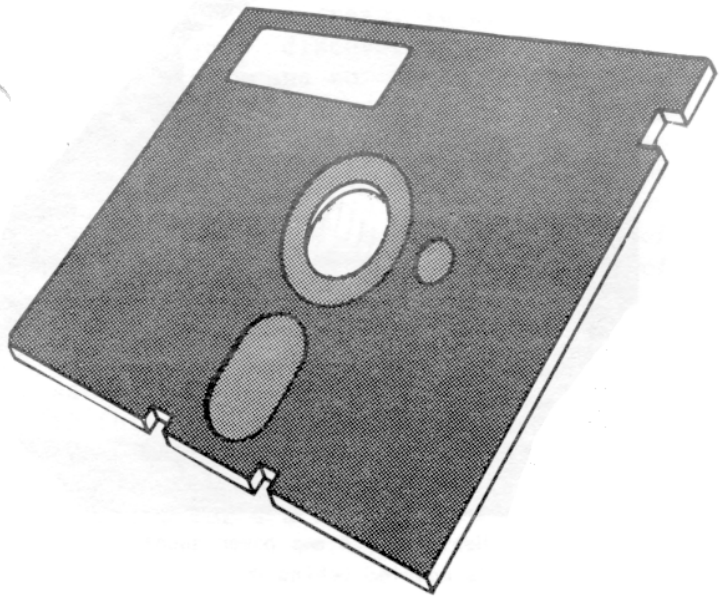
A program tape and sufficient documentation to get the user started, is available from Paul Hunter, 1630 Forest Hills Dr., Okemos, MI 48864. The taped program is to be used with a minimum of 64k of memory, and memory may be assembled from a series of 16k Timex modules, it may be purchased units such as Memotech 64, Byte-back 64, or it may be in the form of boards having both volitile and non-volitile memory. The T-S HORIZONS series includes the methods to assemble packs, make expansion boards and to combine various memory types to suit the users needs. Experiments in testing and programming are carried thru the series.

Some of the system concept available to the user (either entering a great deal of machine code or purchasing the tape) includes a real directory of up to 15 entries or instructions to SAVE, LOAD, PURGE, RECLAIM, PACK, BANK, ROOM and QUIT. Great flexibility is provided for almost any number of bank blocks. Use is made of the 8-10k block of RAM for operations.

Virtual memory is included in BSOS. This means that memory space (address) that the processor is using can be greater than actual memory. BSOS will give the user up to 80k bytes in length if there is a full complement of 4 banks. Even many of the concepts are useable with only 64k. It appears that considerable planning is necessary to properly segment programs and to use variables wisely. A point...while we normally can use 9999 line numbers, this program permits duplicate line numbers with proper segmenting. This is possible because program segments are moved into addressable space when required and then moved back when their need is ended. Data is also moved in this manner.

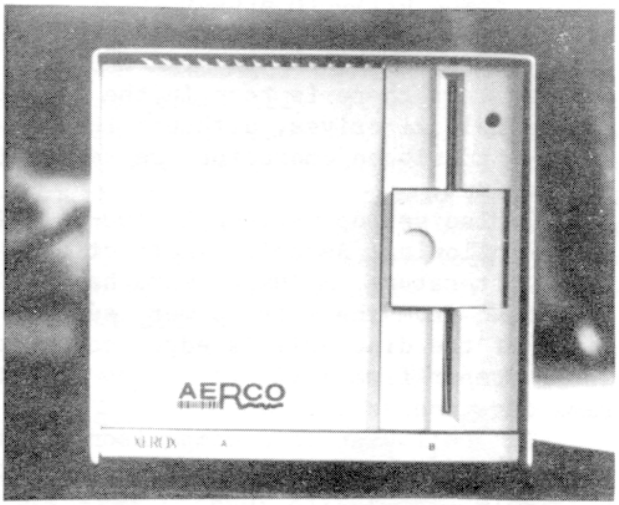
Users of large memory systems, not disk, ect., could well improve their operation with BSOS. Substantial speed improvement should be noted and a more professional system is provided the user.

While the purchase of the BSOS tape and document ($10.00 ppd. from the address mentioned above) is a good buy, I suggest obtaining volumes 4,5,6,7,9,10,11 and 12 of T-S HORIZONS to have complete documentation and reference for BSOS.

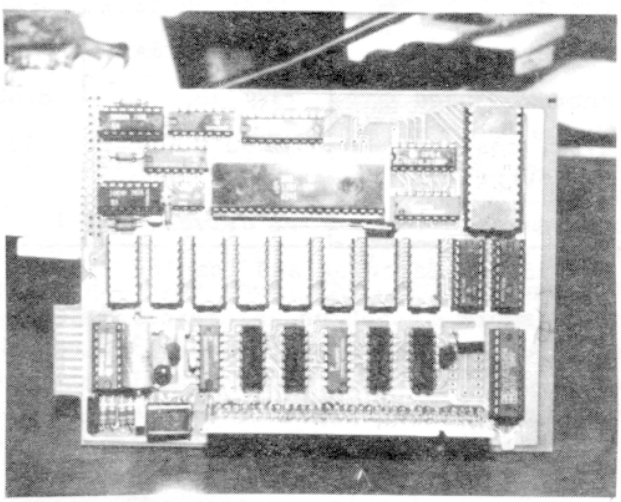


AERCO FD-68 DISC DRIVE SYSTEM FOR THE 2068 PART 1

reviewed by Dennis Jurries



Aerco single 2/3 ht. floppy drive in cream colored steel case.



Fully populated interface board was designed using Apple's MacPaint. Note: DOS EPROM is shown in upper hight-hand corner

A week ago, I had the honor of receiving number 20 of 20 pre-released models of the FD-68 Disc Drive System for the Timex/Sinclair 2068 from Aerco, for review. After a bad experience with trying to obtain the Millennia K Disk Drive Interface from Ramex (see accompanying article), I was leary of looking at an incomplete disc operating system (DOS), but I was pleasantly suprised. (Editor's Note: Aerco will be releasing updates for the interface board as improvements are made. Simply replacing the socketed EPROM is all it takes. Aerco will provide the updates free. In fact, right after our review unit was shipped, we received the first EPROM update. Eventually, the FD-68 will contain all of the extensions, and a proposed Spectrum mode.) The main commands to operate the system are:

FORMAT "", ... to format disc

MOVE "n.X", ... to save to disc

CAT "n.X", ... to load

ERASE "n.X", ... to erase program from disc

CAT "", ... to call disc catalog menu

n = name of program (1 to 10)
x = extension as follows:

.ARO - refers to dock bank

.BAS - basic program

.BIN - binary data (machine code program)

.BUT - boot program to be executed at start up

.CHR - character array

.DAT - numeric array

.LRO - LROS runs in dock bank starting at 0

.SCR - screen is a copy of the video display

Examples: CAT "tasword.BAS",
MOVE "zeus.BAS",10
MOVE "zeus.BIN",#,#

= start and length of MC

The system comes with an interface that is 4 inches tall by 6 inches long with through edge connector for other add-ons. There is also a boot disc and a 2/3 height Remex drive in a case (6 5/8" X 7"W 10"L), with a power supply on the end, extending the lenghth to 13 inches. It appears that there is room in the case for two additional drives, although the power supply and ribbon connector are set up for two maximum.

I also set up my Tandon 100-2A disc drive following Aerco's instructions in their literature. A jumper wire had to be installed from the + 5v power supply to pin 2 of the disc drive's edge connector, and a jumper from + 12v to pin 34 of the same edge connector.

The following is a comparison of the features between two disc drive interfaces available for the T/S 2068:

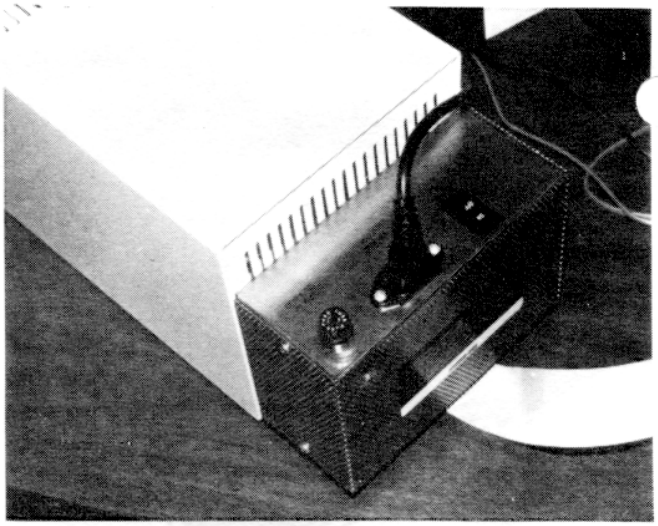
	RAMEX	AERCO
1st drive	QUAD density	any
memory used	4 to 8k RAM	ROM
approx. speed	32k/sec	8.6k/s
syst. cost (do it yourself)	$450	$380
to be useful...	2 drives	1 drive

Some searching and loading times:

Tasword II ..... 5.7 sec.
Zeus Assembler ..... 3.5 sec.
A 37.6k BASIC program
I wrote that loads from
cassette tape in 3 min.
& 14 sec. ..... 4.87 sec.

On a double-density, double-sided disc, you have 400k of memory storage. I believe that with the 64k additional RAM in 8k bank switching, the RGB output port, and the DOS on ROM, make this system the best buy for your money. In the next issue of TIME DESIGNS, I will give further information on the Aerco Disc Drive I/F.

System available from: AERCO, Box 18093, Austin, TX 78760. Cost: Interface- $199, Drives- $99 each, Power Supply/Case- $99. CP/M Boot Disc will be available soon for the FD-68 (Kaypro/Osborne version).



Heavy duty 5 amp power supply
is mounted behind drive case.

ORDERING PROBLEMS FROM RAMEX/Millennia K

by Dennis Jurries

At our Users Group meeting for four months, I would report on the status of the Millennia K Disk Drive Interface that I had ordered from Ramex International Ltd., 48945 Van Dyke Rd., Utica, Michigan, 48087, for $200. The first meeting I reported that I had ordered the interface and had sent a letter with the money order telling Ramex that I wanted to use my Tandon 100-2A as the first drive (double-density, double-sided). If the interface would not work and the software could not come set to run on this drive, then I instructed them to refund my money. I also reported on the phone call that I had made just the day before. The person I talked to at Ramex read my letter back to me over the phone, and said that there was no problem, and that they were going to ship between 12 and 15 drives and interfaces that Friday. They informed me that I was number 13 on the list.

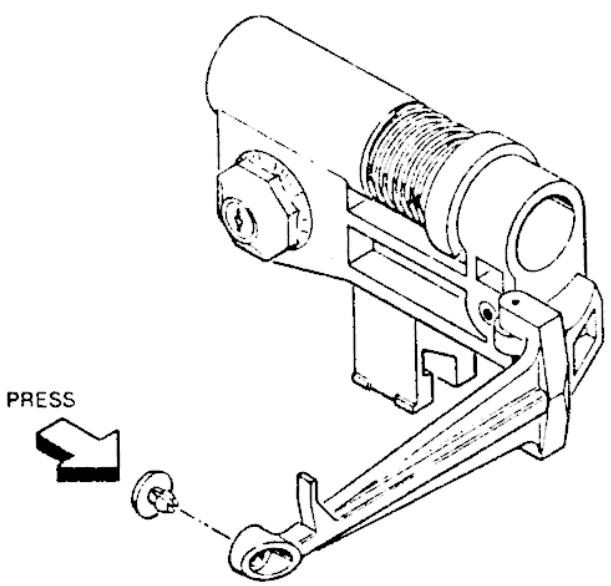
The next meeting (one month later), I reported that I had received nothing and had heard nothing. At the third meeting, I reported and showed an interface manual that was shipped to me. I also reported calling Ramex again, and of being assured that my interface would be mailed that Friday. Tim Woods of Time Designs Magazine also reported talking with Ramex, and related that they had told him that they were building my interface at that time. Also, the interface manual that I had received said nothing about having to have a quad-density drive as the first drive.

The fourth meeting I reported that I had finally received my interface, but had sent it back. The interface had come uncased with a letter saying that Ramex had not received all of it's cases for the interfaces from the manufacturer, and had sent it anyway, so I could use it...and would be sending the case later. I looked for, but did not find the drive cable with my order. Also, the drive software was on a double-sided, double-density disc, but had been formatted to quad-density!?! I called Ramex to find out why this happened and was told that the system was set up on quad-density because "they wanted to only sell the complete package (drive + interface)," and that they "made more money on the drive than they did on the interface". They also said that I could return the interface for a full refund, and that they had "lots of back orders to fill".

(Editor's Note: if anyone has a similar experience with this or any other dealer, please drop us a line at TIME DESIGNS, describing your problem.)

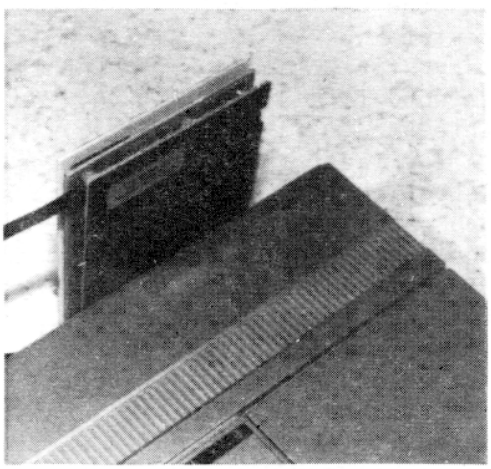
REPAIR DATA

If your disk drive is exhibiting LOAD/SAVE problems, there may be two possible solutions. 1. If you can transfer a program onto a disk programmed on your drive, but cannot a program from another unit (like a commercial disk), the head is out of alignment. You will need to have a technician repair it. 2. If you can neither SAVE/LOAD programs from your unit, the problem may be in the head load button pad. This pad gets dirty and/or worn, and can cause problems. It can be removed and replaced easily by the user. Replacement button pads can be found at part houses.



ZEBRA-TALKER SPEECH SYNTHESIZER

reviewed by Tim Woods



Speech synthesizers are like a lot of inexpensive computer add-ons...they aren't really essential compared to say a printer. However, they can be a lot of fun, and with a little bit of imagingation, could be put to some sort of use.

The ZEBRA-TALKER is a thin module that plugs into the back of the Timex/Sinclair 2068, with a straight-thru connector provided for attachment of other peripherals. The pc board is covered and protected on both sides by thick cardboard. The Zebra-Talker doesn't draw any power from the 2068 because of a small 7.5 DCV transformer that is provided (just what every Timex owner needs--one more transformer). The heart of the unit is the Votrax SC-01 Speech Chip.

This particular type of speech device uses 45 basic speech "sounds" which are called phonemes. The phonemes can be linked together to produce around 1,400 words. More words can be produced by combining various sounds to simulate words. Phonemes are entered by typing in codes. A very nice 20 page dictionary of words and there related codes is provided.

To assist the Zebra-Talker user, is a phoneme editor on cassette software. It is menu-driven, and simplifys entering the codes. If you have made a mistake, or wish to add or change your words, special commands can be used to speed up the chore. I found that the editor was simple, but somewhat slow in it's execution. Also on the same tape is a "text-to-speech" MC program that allows the Zebra-Talker to operate through the use of BASIC PRINT statements. The text-to-speech routine has a large vocabulary stored in memory, which is scanned when a word is put into a string or string variable.

A low level output line is included on the Zebra-Taker via a permanently attached 12 inch patch cord. An external amplifier is required to hear the synthesized speech, as no provision is made for a connection to the internal speaker on the 2068. I used a home stereo amplifier and pair of speakers. This gave very excellent results, as the signal from the Zebra-Talker was very clean and crisp. It should be noted that the manufacturer has a companion battery powered amp/speaker combination for $12.50. It was untested by me, but experience tells me that it must be a low-volume device. I feel that the stereo, or a similar means is very suitable for the home user.

When I first hooked it up, and typed in the simple codes for the words "hello", the voice coming from the loudspeakers was both chilling and funny at the same time. With further use and experimentation, the newness quickly wore off. If you have heard one of those T/I "Speak And Spells" that have been around for educational purposes, you might somehow imagine what the Zebra-Talker sounds like. One feature, that takes away the semi-monotone effect is selectable speech inflection (or level of pitch). Four levels are accessible.

Good documentation is provided. If you think this device is for you, by all means buy one. There are routines shown to include speech in your own programs, so someone out there probably has come up with a good use for the Zebra-Talker. It can be purchased from Zebra Systems, 78-06 Jamaica Ave., Woodhaven, NY 11421, for $69.95 plus $3.00 s & h. There is also a version for the T/S 1000 for $64.95.

NIGHT GUNNER

reviewed by Tom Judd

NIGHT GUNNER is a game program that was written originally for the British Spectrum, but has been translated to run on a stock T/S 2068. It is on the Digital Integration label (the company that produces the popular Fighter Pilot simulation program), and is sold here by Knighted Computers, 707 Highland St., Fulton, NY 13069, for $19.95 plus $3.00 s & h (total order). The basic theme of this game is a WWII air battle.

As long time readers of TIME DESIGNS know, I very much enjoy playing and reviewing games for T/S computers. Night Gunner is an arcade style game in the truest sense of the word. If you were to go down to the nearest arcade video solon, there would be a least half a dozen games that have similar themes and strategies as this one.

You are on a flying mission at night, and as gunner and bomber, you must defen your plane against enemy attack and also destroy ground targets. The two standard screen displays throughout the different missions are straight ahead with moveable gun sights, and flying overhead dropping bombs at high altitudes.

It is fairly easy to score high in this game, especially with joystick in hand. This is probably Night Gunner's biggest plus...joystick control. Playing the gamut of Spectrum software without a joystick, makes a person really appreciate a program with this feature. The response here is quite smooth.

The game also continues for quite a while, even if you aren't shooting like an ace, giving the player ample time to improve skill and points. Two players can also play at once.

While Night Gunner's graphics are adequate, they certainly don't cover anything new. Not like some other English games that this reviewer has seen. But I have a hunch that the author simply wrote this program to be a full-fledge "shoot-er up" arcade game. Nothing more and nothing less. It executes this one goal extremely well.

T/S 2068 GRADE BOOK

reviewed by Dennis Silvestri

Are you a Teacher? Do you use a 2068 computer? Do you have a large number of multiple classes with numerous students? Then the T/S 2068 GRADEBOOK program is for you.

This machine code program allows you to load multiple classes (up to 255 if you use small classes) at the same time with each class handled individually, you can have up to 46 students per class. When you call up a class to get their averages every student will appear on one screen. The averages can be weighted or unweighted and each class can have its own set of weights, which can be changed at anytime. All grades are numeric and each student has a special grade slot for extra credit and another slot for demerits. A missed test is not included in the average unless you wish it to be. Grades can be changed or deleted. Names can be changed or removed. Classes can be alpahabetized. New students can be added to any class. Search for and list any student and their entire record on one screen. All classes or individual data can be printed on the Timex 2040 Printer, however, I prefer a full size printer myself.

The T/S 2068 Gradebook program comes with complete documentation and is available for $19.95 from Robert C. Fischer, 221 Scoggins St., Summerville, GA 30747. This program exceeds every other program I've researched or have used...well done Mr. Fischer.
(Editor's Note: The author informed TIME DESIGNS that a new improved 2068 version 1.4 is ready now for the same price. There is also a T/S 1000 version available.)

CONGRADULATIONS
The winner of TIME DESIGNS
FREE SOFTWARE GIVEAWAY
is Harold Tolliver of
Palos Hills, Illinois.
Harold's T/S user friend
Jean Cullinan
also won some software.
Harold's coupon was randomly
drawn from a total of
156 entries.

SPECTRUM SOFTWARE

reviewed by Michael E. Carver

WELCOME TO THE MACHINE!

DEUS EX MACHINA (Latin) noun, (1) Power, event that happens at the right moment to solve difficulty. (2) A god, introduced into a play to resolve the plot.

When I first saw the ad for the Spectrum program "Deus Ex Machina", my interest was piqued. They offered a "televised fantasy" which was syncronized to a stereo soundtrack, starring yourself, plus Ian Dury, Jon Pertwee, Mel Croucher, Donna Bailey and Frankie Howerd.

For those of you who are not Anglophiles, Jon Pertwee was one of the various Dr. Who's in Britain's long-running sci-fi television series of the same name. Ian Dury is a long-standing rock musician with a "bent" sense of humor. Frankie Howerd is a comedian who has worked in film with Peter Sellers, and in television.

Let me assure you, it did indeed live up to my expectations! The animation is detailed and smooth. The soundtrack stands on its own as a work of art. Machina is a novel and refreshing approach in computer programming. Not only is the concept of a soundtrack with storyline new, but the ideas embodied in the game itself are of a different nature than the usual shoot-em-up games. You are asked to touch, caress and nurture a new life into existence, guiding it through the seven ages of development, from conception through old age.

The year is 1994 and the Central Computerized Data Bank which holds all the Police and State Security records of the United Kingdom becomes all powerful. Then ..."Tuesday evening, after tea and compulsory prayers, the machine rebelled..." You, the player, are invited to control the machine's development of a new life while helping it avoid the dreaded Defect Police. The instructions are rather cryptic, but then so are the lessons we receive during life. It will take many plays just to learn exactly what must be done and many more to achieve any great expertise.

It would appear that this program was developed using FORTH and an animation package similar to "White Lightning" (see T.D.M. issue #3). The soundtrack is a professionaly produced "opera". Just listening to it is reminiscent of the power and novelty of the musical "hair" or of Pink Floyd's, the "Wall", and of National Public Radio's broadcast of the "Hitchhiker's Guide To The Galaxy."

Deus Ex Machina is not a child's computer game, but a mature science-fiction fantasy-morality play-interactive adventure. The program is controlled by the keyboard (4 keys--up, down, left, right), or by Kempston or Interface 2 joysticks. The program was written by Andrew Staff and Mel Croucher and published by Automata. My thanks to all of those who worked to make this program a reality. I hope to see more great ones in the future. I hesitate to say more, and thus destroy the sense of discovery or even ruin the plot.

Machina comes in a book-sized storage case with two cassettes (one for the computer and one for the soundtrack), a poster and a complete script. The program was obtained from Speedysoft (formerly Software Supermarket) 87 Howard's Lane, London England, SW15 6NU for £15.00 plus £1.50 for postage. They also have a 24-hour telephone order number: 01-789-8546.

ASLEEP AT THE WHEEL

Your name is Wally Week, you are asleep, and you are having a nightmare! This is no normal nightmare. If you cannot find your alarm clock and wind it up you will not wake up and will be late for your work. If you are late, you lose your job. Welcome to "Pyjamarama", an arcade game for the Spectrum from Mikro-Gen.

This is an excellent and cute game. Wally's alter ego must persevere through this nightmare and find some way to wake the real Wally up. (Note: Wally is Cockney slang for a cucumber cured in brine--a "pickle-brain".) In order to wake Wally up, a series of tasks must be performed and in a dream this may be no easy chore. You control the character via the keyboard (you can define your own keys--only 3 are needed; left, right, jump) or with the Kempston or Interface 2 joysticks. You must explore the numerous rooms of Wally's nightmare house and collect objects to help you obtain your goal. In the process of collecting these objects, you must dodge devouring roasted chickens, ghosts, flying axes, grasping hands and many mor surreal foes. Wally can only carry two objects at a time. Sometimes one or two items are needed to pick up a certain object. you have three lives, but as you progress through the house you lose snooze energy or some of the nightmare goblins will snatch it away from you. No snooze energy and your life is gone. Keep your eyes open for midnight snacks to bring your energy back up.

This is a very amusing graphic arcade game. The character is easy to control and there are large colorful graphics. Each room is richly drawn with chairs, boxes, barrels, and tables to climb on. The animation is smooth and quick. The only complaint I have about the graphics is that some have color attributes which "bleed" onto the background, but then this is a dream! Strange things happen to Wally, like entering a video arcade game of invaders. Wally becomes a part of the game and must fight the invaders (houseplants, roasted chickens, ect.) which drop bottles and telephones and other household appli ances onto him while he fights back with shooting forks.

You may find logic a drawback while trying to figure out parts of this game, remember this is a dream. It will take you many plays just discovering the various rooms and the means to enter them. Many more will be spent finding the order in which to obtain numerous objects. Even after you have figured out the pattern of the game and have woken Wally up, you can still play with the added challenge of trying to win with the least amount of steps.

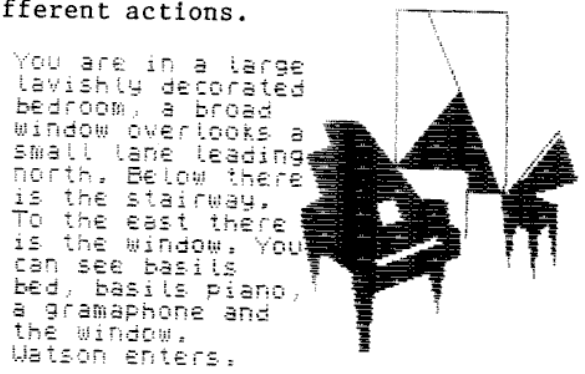
If you like your arcade games with a good laugh, Pyjamarama is for you. The cassette comes packaged in a regular case with full instructions and even a little story. My copy was obtained from Speedysoft for the ridiculous price of £6.95 plus £1.50 for s & h.

THROUGH THE MAGNIFYING GLASS

You have inserted the cassete into your player and the computer has dutifully loaded the program. You now find yourself in Victorian England, sharing a flat with a doctor, overlooking Baker Street. Yes, you deduced it, you are the famous detective, Sherlock Holmes. This is the setting of the new Spectrum adventure program from Philip Mitchell and Melbourne House, the people who gave the computer world "The Hobbit".

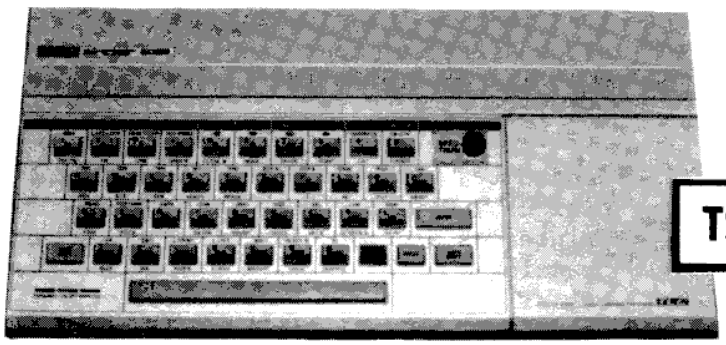
Again we have a text adventure with graphics, featuring "Animication" of characters, "Animtalk" and "Inglish". What does all that mean? Well, Animication is the independent actions and movements of all the characters in the adventure. They will follow courses of action based on their personality and the situation they find themselves in. Animtalk is the ability for you to speak to any character in the adventure, asking them questions or telling them to do a particular task and for them to talk back. You will find that at times, the characters do not cooperate, due to Animication. Inglish is the easy way in which you communicate with the computer and the adventure (i.e. "Open the ornate door and go through the door.") Also included, is a "real-time" feature. Time passes as Sherlock examines items, questions witnesses, or rides on the railcar. This is a very rare element of test adventures and an added challenge. You can also save your progress to tape and reload it back into the computer. This will allow different approaches to be tried and prevents having to start over if you allow Sherlock to be killed.

As Sherlock Holmes, you find yourself confronted with a mystery as yet not chronicled by Watson. (Note: you can use your printer as a chronicler of your adventure by using a print feature which will print out all actions and graphics if you so desire, see example.) This is a mystery which has completely baffled the local police and you can bet that Inspector Lestrade will make the wrong conclusions. You must hunt down the clues, make your brilliant deductions and find the real criminal. The computer has a vocabulary of over 800 words and can carry out over 53 different actions.



I have found this adventure very challenging and well worth the purchase price. I have spent many hours, which have turned into days, which have turned into weeks...and I have yet to solve the final mystery. Sometimes the deductions come easy, but obtaining evidence can be quite the task. I have a few qualms with the program. I have found no means of using all of the vocabulary listed in the accompanying manual and a few glitches have shown themselves, none with major consequences. The most annoying is an "out of memory" report from the adventure itself. One must then reload a saved portion of the game in order to continue. Still, I must highly recommend this program to any mystery and/or adventure lovers in the audience. After all, a program of this size and scope is bound to have a few bugs in it.

Sherlock comes in a small book-sized box, with an instruction manual, and a train schedule. Available from Speedysoft for £14.95 plus £1.50 for postage.



TS 2068 / SPECTRUM-WARES

We welcome old and new readers to this special column for Timex/Sinclair 2068 owners who have decided to get back to their "roots" and converted their computer to be compatible with the English Sinclair ZX Spectrum. For those of you who are new to this idea, there are several methods of conversion. Since space doesn't permit a lengthy discussion of how it is done, we will cover the topic in the next issue as a refresher. In the meantime, we want to say that everyone is welcome to give their input towards this special section, such as a tip that you have recently discovered about 2068/Spectrum compatibility. We feel that TIME DESIGNS is unique in supporting the growing number of 2068 users who have realised the many benefits of "going English". Here is some news that we have heard:

A bulletin received from Clifford And Associates reported that the Z-LINK 2068/ Spectrum Interface Card has been improved. It now operates properly with all Spectrum emulation, including ROMSWITCH. The new version contains a special "ROM select" circuit, and is said to be 20% faster than the previous model. Write to: 13910 Halldale Ave., Gardena, CA 90259 for further information, dealer listing and prices. There are several models of the Z-LINK available, including fully assembled and kits, and custom features for particular English drives.

DAMCO Enterprises, 67 Bradley Ct., Fall River, MA 02720, has added some new products to their line of products for the 2068. These include the dk'tronics line of computer add-ons: a high-res light pen, a Spectrum software compatable joystick interface, a three-channel sound synthesizer and a speech synthesizer. Also DAMCO is offering a version of their 2068 expansion buss adapter for Spectrum peripherals, and are calling it the RAINBOW Interface. It is priced at $34.95.

Issue after issue, we here at TIME DESIGNS rely on one particular individual to fill us in on new equipment and software that has cropped up in Great Britain. This person is Bob Dyl of the English Micro Connection, 15 Kilburn Ct., Newport, RI 02840. This issue Bob reported that the three most popular computer games in the U.K. (as far as sales go) are: Raid Over Moscow, the new "Gremlins, The Adventure" (based on the Stephen Spielberg movie), and "Backpacker's Guide To The Universe Vol. 1". There is a special add-on called INTERFACE #3 that is both a hardware and software package. It is reported to have the capability to virtually BREAK and SAVE any commercially available Spectrum program to cassette or microdrive/waferdrive. It sells for $59.95 and will be available soon from EMC. This issue Bob Dyl has a "special deal" for TIME DESIGNS readers. A 6-pack Spectrum software package for $15 plus $2 s & h. The package includes the following titles: Horace Goes Ski-ing, Scrabble, Checquered Flag, Survival, Chess and Mega Chip. The news doesn't stop here, there's more...announcement of a new software club for "game players only". The official English Micro Connection Games Software Club. $9.95 a year for membership will get you the club membership card and entitle you to 15% discount off EMC's already low computer game prices, plus very special deals offered on occaison just for members. Finally, new white plastic wipe-off keyboard templates for the T/S 2068, for only $3.00. If any of the previous information interests you, get in touch with Bob, and quote our 2068/Spectrum-wares section as your source.

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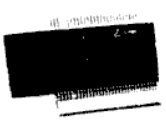

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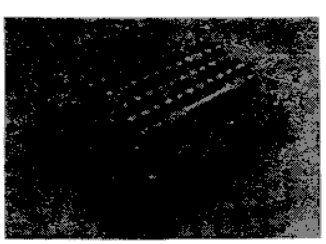

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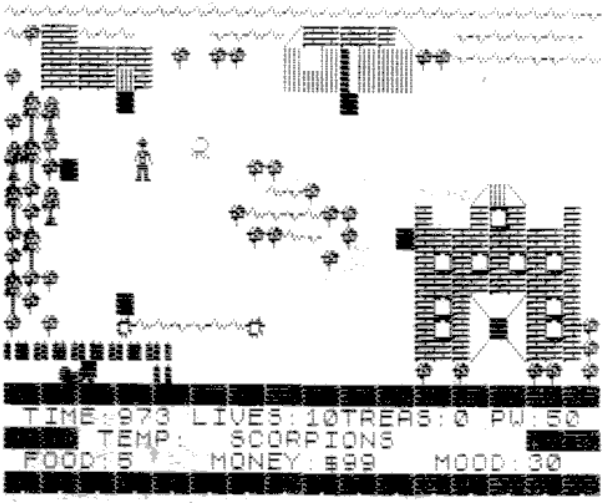

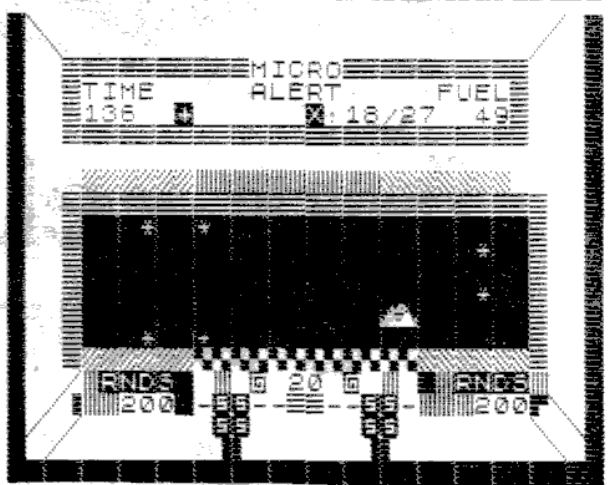

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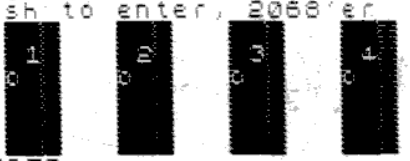

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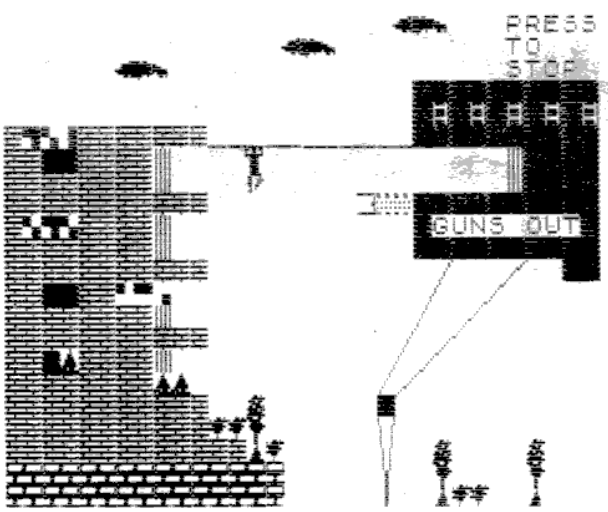

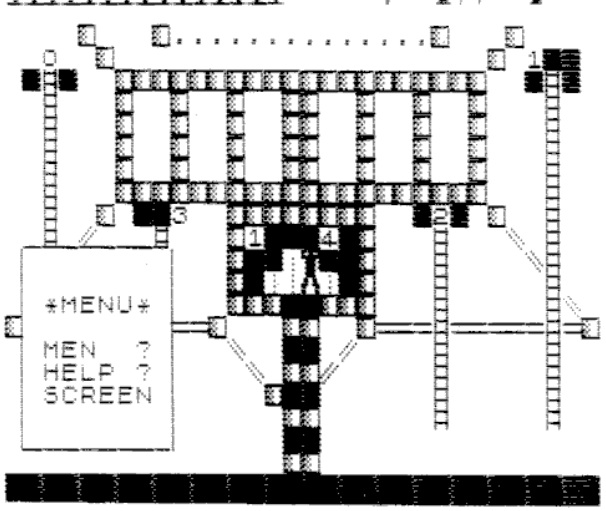

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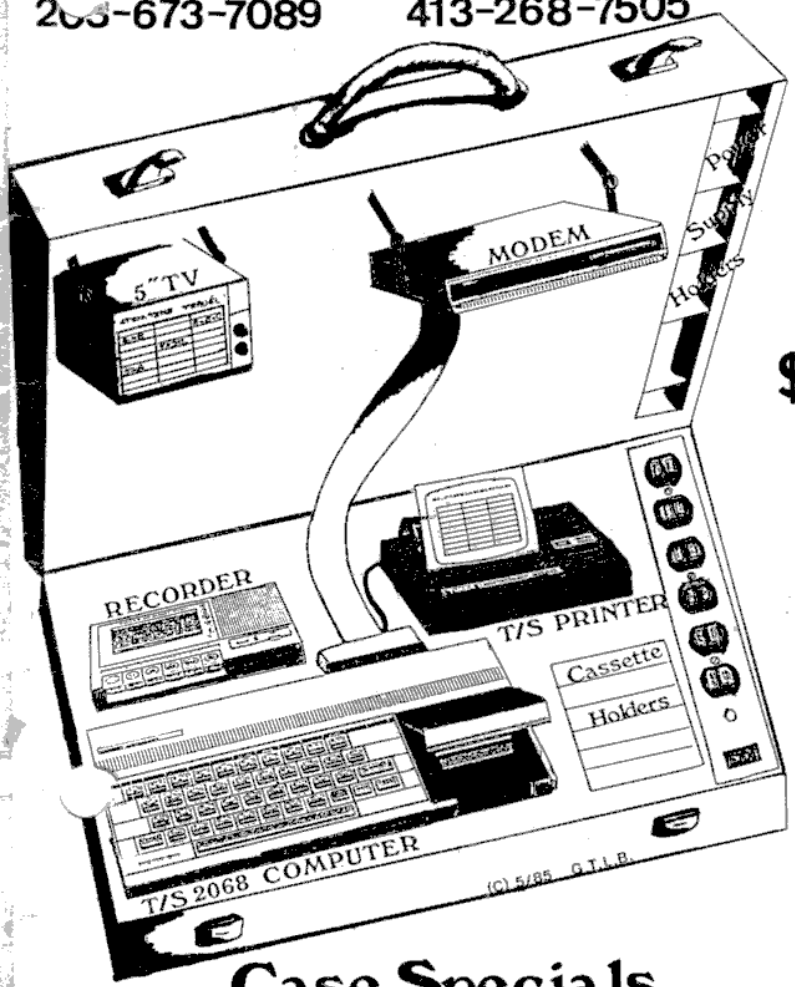

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****
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TAPE UNLOCKER for the 2068: MERGE "". This easily stops automatic run. If you find yourself in an input that you can't get out of then type: USR 15082

Have you noticed that while in the command mode you can type commands after "LOAD""? That way you can have the computer BEEP, SAVE OR LOAD SOMETHING ELSE after the first load.

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The JRC SOFTWARE EASY EDITOR, however, is based on a completely different concept than other editors. It is probably the fastest, most efficient, and easiest text editing system ever written in BASIC. It also has some interesting features for ease of use, such as a bold character option for the 2040 printer. JRC will adapt to your brand of printer if necessary!

2 ***TOUCH TYPE LEARNING GAME***

Even if you're not a typist now, you can learn to touch type on the 2068. This program will introduce you to 197 symbols and keep track of your progress on each. Weak keys are reviewed more often than others. With practice you will be able to touch type BASIC programs, which is much easier and handier than the "hunt and peck" method.

Although this may be one of the most practical and educational programs you can buy for the 2068, keep in mind that it is a GAME and a fun one too. There is even an option for kids that just teaches the use of the keyboard without home-row drills. You and your family won't tire of this program overnight.

3 ***HI-RES LANDER***

Why settle for games that use block graphics? The JRC SOFTWARE version of the classic lunar lander features a ship that moves pixel by pixel. With that kind of realism, you have to have a soft touch to land. Plus patience. And it gets harder every round! Fortunately for novice astronauts, there are two levels. There is the regular "hard" option and an "easy" option intended for children. (But you can practice on 'easy' when no one is looking.)

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5 *** OSCILLOSCOPE ***

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6 *** THE GREAT GRAPHICS SHOW ***

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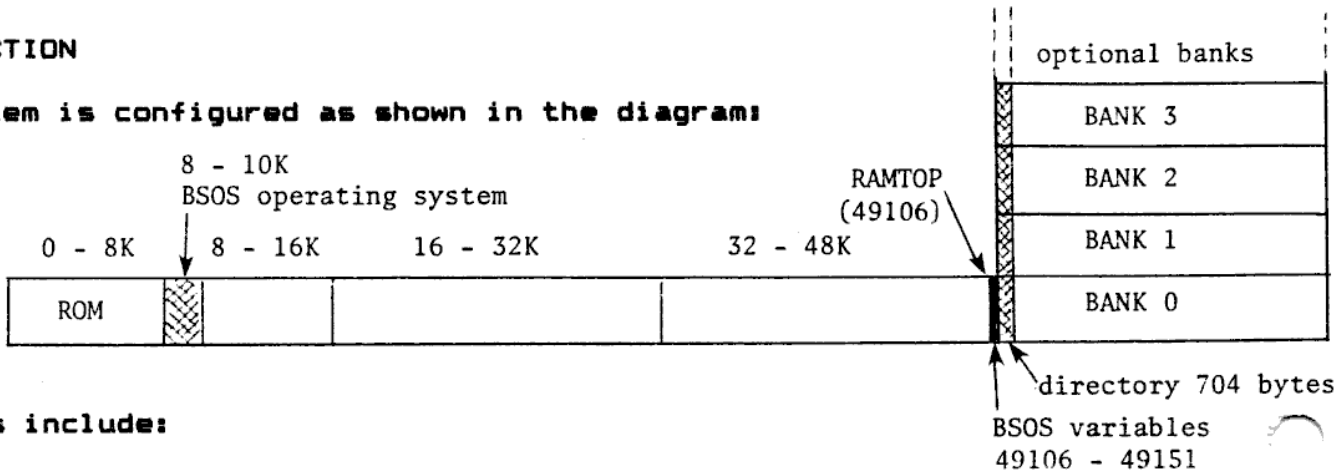
*** AS DESCRIBED IN T S HORIZONS (March 1984 through March 1985) ***

*** USE WITH A 64K RAM PACK ***

*** OR BUILD A BANK-SWITCHED SYSTEM WITH LIMITLESS MEMORY ***

INTRODUCTION

The system is configured as shown in the diagram:



Commands include:

SAVE	**Save a file from the BASIC system to the bank**
LOAD	**Load a file back from the bank into the BASIC system**
PURGE	**Purge a file from the bank**
RECLAIM	**Clear variables or a program (or part) from the BASIC system**
PACK	**Repack the contents of the bank**
BANK	**Change from one bank to another**
ROOM	**Determine space available in a bank**
QUIT	**Return to Sinclair BASIC system**

```
BANK 1 DIRECTORY
********************************
NO.   NAME     .EXT  ADDR  SIZE
---   ----     ----  ----  ----
A: DIRECTORY  .DIR:49152:00704:
B: SAVEROUTINE.PRG:49856:00134:
C: DEC-TO-HEX .PRG:49990:00308:
D: HEX-TO-DEC .PRG:50298:00134:
E: CONVERSION .PRG:50432:00750:
F:
G:
H:
I:
J:
K:
L:
M:
N:
O:
********************************
1:SAVE  3:PURGE   5:PACK  7:ROOM
2:LOAD  4:RECLAIM 6:BANK  8:QUIT
```

A sample directory listing the contents of a bank is shown on the right. Some of the routines in BSOS can be called from within a BASIC program to create a virtual memory system -- so you can have a program larger than 16K or a huge data file. A virtual memory system allows the program to change while it is running.

The program on the tape will transfer the operating system to the 8-10K block; reset RAMTOP to 49106; and load a directory (and any routines already in the bank). The tape is available for $10 ppd from:

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TS 2068 DISC SYSTEM

FD-68 INTERFACE

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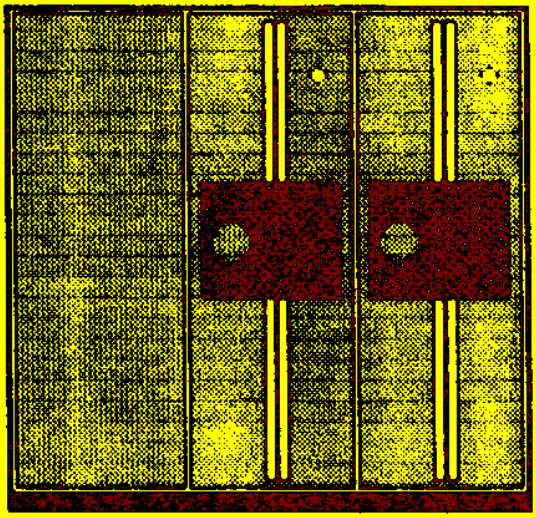
3 inch to 8 inch drives
Shugart compatible

Single or double sided

40/80 tracks per side

64K RAM & 8K ROM
on board

RGB monitor output



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